

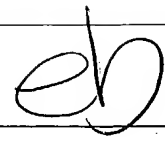


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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,457	12/27/2001	Dennis E. Smith	82987AEK	8364
7590 03/29/2004			EXAMINER	
Paul A. Leipold Patent Legal Staff Eastman Kodak Company 343 State Street Rochester, NY 14650-2201			AUGHENBAUGH, WALTER	
			ART UNIT	PAPER NUMBER
			1772	
DATE MAILED: 03/29/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/033,457	Applicant(s) SMITH ET AL. 	
	Examiner Walter B Aughenbaugh	Art Unit 1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,7-19,21,22,24-40,42 and 43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,7-19,21,22,24-40,42 and 43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 4, 2004 has been entered.

#### ***Acknowledgement of Applicant's Amendments***

2. The amendments made in claims 1, 7, 21, 24 and 26 in the Amendment filed February 4, 2004 (Amdt. C) have been received and considered by Examiner.
3. The cancellation of claim 6 in Amdt. C has been acknowledged by Examiner.
4. The amendment made in the specification in Amdt. C has been received and considered by Examiner.

#### ***WITHDRAWN OBJECTIONS***

5. The objection to claims 6, 7 and 24-27 made of record in paragraph 15 of Paper 6 has been withdrawn due to Applicant's amendments in Amdt. C.

#### ***WITHDRAWN REJECTIONS***

6. The 35 U.S.C. 103(a) rejections of claims 8, 17, 36 and 40 that were repeated in paragraphs 12-14 of Paper 6 have been withdrawn due to Applicant's amendments in Amdt. C.
7. The 35 U.S.C. 102(b) rejection of claims 1, 2, 5-7, 9-16, 21, 22, 28-35 and 39 made of record in paragraph 17 of Paper 6 has been withdrawn due to Applicant's amendments in Amdt. C.

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8. The 35 U.S.C. 103(a) rejection of claims 18, 19, 37 and 38 made of record in paragraph 18 of Paper 6 has been withdrawn due to Applicant's amendments in Amdt. C.

***REPEATED REJECTIONS***

9. The 35 U.S.C. 103(a) rejection of claims 42 and 43 made of record in paragraph 19 of Paper 6 has been repeated for the reasons previously made of record in paragraph 19 of Paper 6.

***NEW REJECTIONS***

***Claim Rejections - 35 USC § 103***

10. Claims 1, 2, 5, 7, 9-19, 21, 22, 24-26 and 28-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. in view of Narita et al.

In regard to claims 1, 2, 5, 7, 17, 21, 22, 24-26, 36 and 39, Maier et al. teach a shaped article such as a film, sheet, bottle (a container), tube, fiber or rod having a continuous first polymer phase having dispersed therein microbeads of a crosslinked second polymer that are bordered by void space (col. 1, lines 15-19 and col. 7, line 1). Maier et al. teach that acrylic acid, methyl acrylate or methyl methacrylate is a typical monomer for making the crosslinked second polymer for making the microbeads (col. 7, lines 47-52 and Examples 15-18 and 23-26 and col. 17, lines 35-45); the monomers from which the second polymer is derived, acrylic acid, methyl acrylate or methyl methacrylate, therefore, comprise less than 10 wt% styrenic monomers and less than one wt% styrenic monomers as claimed in claims 2 and 22 (i.e. 0 wt% styrenic monomers). Note that acrylic acid, methyl acrylate and methyl methacrylate are acrylic monomers (and that methyl methacrylate is a methacrylic monomer in regard to claim 24), as acrylates are polymers of acrylic acid or its esters, as evidenced by *Hawley's Condensed Chemical Dictionary*. The compositions taught by Maier et al. have superior thermal stability

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(col. 3, lines 9-11). In regard to the recitation of claim 21 that the microbeads are made from acrylic crosslinking monomers, Maier et al. teach that the microbeads are made from methyl methacrylate monomers (col. 7, lines 47-49 and Examples 15-18 and 23-26 and col. 17, lines 35-45), which are acrylic crosslinking monomers. The recitation "experiencing a 2% weight loss above 270°C" defines thermally stable as experiencing a weight loss of less than 2% at temperatures below 270°C; since Maier et al. teach the shaped article comprising the microbeads as claimed by Applicant having the same composition as that claimed by Applicant, the microbeads of Maier et al. are necessarily thermally stable as Applicant has defined thermally stable. While Maier et al. teach that the article is virtually free of the "yellowing with time" problem that "plagues cellulose-based papers" (col. 5, line 67-col. 6, line 2), Maier et al. fail to explicitly teach that the microbeads have a change in CIELAB value  $b^*$  towards yellowness on exposure to UV light wherein the change in  $b^*$  is less than or equal to 0.2.

Narita et al., however, disclose a receptor layer of a dye diffusion thermal transfer dye receiving sheet (col. 4, lines 17-25, col. 1, lines 15-40 and col. 6, lines 36-38) in which the  $b^*$  value, which represents the yellowness of the layer, is tailored to be from -5 to 5, inclusive of -5 and 5, where a larger (more positive)  $b^*$  value indicates a higher degree of yellowness (col. 10, lines 45-62). Narita et al. disclose that by appropriately incorporating coloring materials such as pigments, dyes and fluorescent whitening agents, the desired color is produced to match the color of the corresponding printing paper (col. 10, lines 36-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimal amounts and types of coloring materials to add to the second polymer of Maier et al. via routine experimentation in order to minimize yellowing to a degree as indicated by the change in

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b\* value depending on the end user-result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In regard to claims 9-12 and 28-31, Maier et al. teach that the microbeads have a size of about 0.1-50 micrometers, that the microbeads are present in an amount of about 5-50% by weight based on the weight of the first polymer and that the voids occupy about 2-60% by volume of the shaped article (col. 4, lines 60-65).

In regard to claims 13 and 32, Maier et al. teach that the polymeric microbeads are coated with a slip agent (col. 12, lines 51-53).

In regard to claims 14-16 and 33-35, Maier et al. teach that the first polymer is a polyester (col. 6, lines 12-17) or a polyolefin such as polypropylene (col. 6, lines 52-53). Maier et al. teach that poly(ethylene terephthalate), which may be modified by small amounts of other monomers, is especially preferred as the first polymer (col. 6, lines 44-46).

In regard to claims 18, 19, 37 and 38, Maier et al. teach that methyl methacrylate is a preferred monomer for making the crosslinked polymer (col. 7, lines 47-55) and that the crosslinked polymer is crosslinked using a crosslinking agent (col. 7, lines 1-2 and 43-46). Maier et al. and Narita et al. fail to explicitly teach that the second polymer is derived from monomers comprising more than 20 wt% of crosslinking monomer. Maier et al. further disclose that the polymer of the microbeads is crosslinked to the extent of having a resiliency or elasticity at orientation temperatures of the matrix polymer such that a generally spherical shape of the crosslinked polymer is maintained after orientation of the matrix polymer (col. 4, line 68-col. 5, line 4 and col. 13, lines 21-37). Therefore, it would have been obvious to one of ordinary skill in

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the art at the time the invention was made to have varied the concentration of the crosslinking agent (i.e the crosslinking monomer as claimed) of Maier et al. via routine experimentation in order to achieve the optimal resiliency or elasticity at orientation temperatures of the matrix polymer depending on the monomer used as the monomer from which the second polymer is derived and depending on the end user-result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

11. Claims 8 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. in view of Narita et al. and in further view of Saito et al.

Maier et al. and Narita et al. teach the article as discussed above. Maier et al. and Narita et al. fail to teach that the microbeads comprise a copolymer derived from methylmethacrylate and 1,6-hexanediol diacrylate or from methylmethacrylate and trimethylol propane triacrylate. Saito et al., however, disclose a transfer sheet having a thermally transferable protective layer (item 12, Figures 1-3) and optionally a protective layer (item 12a, Figure 3) having an acrylic resin to improve the fastness properties, such as rubbing fastness and scratch fastness, of the protective layer/s (col. 7, lines 17-27). Saito et al. disclose that methylmethacrylate, 1,6-hexanediol diacrylate and trimethylol propane triacrylate are suitable acrylic monomers (col. 7, lines 44-46 and col. 8, lines 25-26 and lines 34-35). Saito et al. disclose the use of the disclosed acrylic monomers as a mixture of two or more of the monomers; therefore, Saito et al. disclose the use of copolymers derived from methylmethacrylate and 1,6-hexanediol diacrylate or from methylmethacrylate and trimethylol propane triacrylate. Therefore, one of ordinary skill in the art would have recognized to have used a copolymer of methylmethacrylate and 1,6-hexanediol

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diacrylate or of methylmethacrylate and trimethylol propane triacrylate as the acrylic polymer of Maier et al. and Narita et al. in order to improve the fastness properties, such as rubbing fastness and scratch fastness, of the article of Maier et al. and Narita et al. as taught by Saito et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a copolymer of methylmethacrylate and 1,6-hexanediol diacrylate or of methylmethacrylate and trimethylol propane triacrylate as the acrylic polymer of Maier et al. and Narita et al. in order to improve the fastness properties, such as rubbing fastness and scratch fastness, of the article of Maier et al. and Narita et al. as taught by Saito et al.

12. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maier et al. in view of Narita et al. and in further view of Hart et al.

Maier et al. and Narita et al. teach the article as discussed above. Maier et al. and Narita et al. fail to teach that the shaped article is coated with a slip agent comprising silica or alumina. Hart et al., however, disclose a thermal transfer printing receiver sheet (col. 3, lines 6-7) that is coated with a coating that contains a silica slip agent to improve the slip, anti-blocking and general handling characteristics of the sheet (col. 9, lines 37-51). Therefore, one of ordinary skill in the art would have recognized to have coated the article with a slip agent in order to improve the slip, anti-blocking and general handling characteristics of the article as taught by Hart et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have coated the article with a slip agent in order to improve the slip, anti-blocking and general handling characteristics of the article as taught by Hart et al.



***ANSWERS TO APPLICANT'S ARGUMENTS***

13. Applicant's arguments on pages 9-11 of Amdt. C regarding the 35 U.S.C. 102(b) rejection of the appropriate claims as anticipated by Maier et al. are rendered moot due to the new 35 U.S.C. 103(a) rejection of claims 1, 2, 5, 7, 9-19, 21, 22, 24-26 and 28-39 over Maier et al. in view of Narita et al. made of record in this Office Action.

Applicant argues that "Maier et al. does not address thermal stability of the microbeads" at the fifth to last line of page 9 of Amdt. C, but Maier et al. teach that the compositions taught by Maier et al. (including the microbeads) are thermally stable as stated in this Office Action and in the previous Office Actions. Applicant alleges that "exposure to UV light specifically is not noted for causing yellowness", but the cause of the yellowness is irrelevant in regard to the patentability of the shaped article; only the structure, composition and properties of the final product is pertinent to the patentability of the shaped article. In the third line of page 10 of Amdt. C, Applicant argues that "Maier et al. does not teach use of less than 10wt% styrenic monomers", but this limitation reads on the condition where 0 wt% styrenic monomer is present as has been stated in this Office Action and the previous Office Actions. Applicant argues that "Maier et al. does not disclose the thermal stability of the microbeads having 5% polystyrene", but the limitation upon which the Applicant relies is not stated in the claims. It is the claims that define the claimed invention, and it is the claims, not specifications that are anticipated or unpatentable. *Constant v. Advanced Micro-Devices Inc.*, 7 USPQ2d 1064. Applicant refers to the Declaration filed November 4, 2003; Examiner treated the content of the Declaration in paragraphs 3 and 5 of the Advisory Action mailed December 1, 2003 (Paper 10). In the last paragraph of page 10 of Amdt. C, Applicant argues that "Maier et al. does not teach or suggest

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appropriate combinations of monomers” that characterize Applicant’s invention, but these “appropriate combinations of monomers” are not claimed since Maier et al. does teach the claimed combinations of monomers.

14. Applicant’s arguments on pages 11-12 of Amdt. C regarding the 35 U.S.C. 103(a) rejections of the appropriate claims have been fully considered but are not persuasive. Applicant relies on Applicant’s arguments in regard to the 35 U.S.C. 102(b) rejection of the appropriate claims as anticipated by Maier et al. that have been addressed above in this Office Action. Applicant further argues that “Maier et al. does not recognize the problem of thermal stability”, but Maier et al. does recognize the problem of thermal stability since Maier et al. teach that the inventive compositions have superior thermal stability (col. 3, lines 9-11) as stated in this Office Actions and in previous Office Actions.

As stated in paragraph 5 of the Advisory Action (Paper 10), Applicant asserts a showing of unexpected results, but Applicant has not met the burden on Applicant to establish that these results are unexpected and significant in that the evidence relied upon does not establish “that the differences in results are in fact unexpected and unobvious and of both statistical and practical significance” *Ex parte Gelles*, 22 USPQ2d 1318, 1319 (Bd. Pat. App. & Inter. 1992) because the claimed invention has not been compared with the closest prior art which is commensurate in scope with the claims as required by MPEP 716.02(b); Dennis E. Smith states on page 2 of his Declaration that “The thermal stability for a 5% crosslink monomer, per the examples of Maier, has not been measured”. The first two lines of the table provided in the declaration are taken from the specification of the instant application and the third line of the table is speculatively extrapolated data as indicated on page 2 of the declaration. Any validity of the third line of this

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table and of the explained reasoning behind making the extrapolation is destroyed by Applicant's own statement that "it is difficult to predict what amount of a specific crosslinking monomer will produce a desired thermal stability" (page 10 of Paper 6).

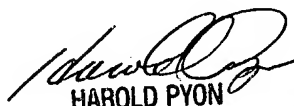
***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is 571-272-1488. The examiner can normally be reached on Monday-Thursday from 9:00am to 6:00pm and on alternate Fridays from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter B. Aughenbaugh  
03/19/04 WBA

  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
1772

3/19/04